CHAPTER 5

Additional Important Recommendations

In addition to the key recommendations set forth in Chapter 4, the Task Force has adopted additional recommendations that will also enhance our ability to implement water recycling projects. These additional recommendations are presented in this chapter organized under the same six issue areas described in Chapter 4. While considered less important than the previous set of recommendations, they nevertheless are feasible to implement and in some cases are essential to address specific types of projects. The numbering of issues continues from the previous chapter.

1. Funding for Water Recycling

1.2. FUNDING COORDINATION

Issue

Different funding agencies often lack coordination of their efforts so as to maximize benefits and prioritize funding.

Recommendation 1.2.1.

A revised funding procedure should be developed to provide local agencies with assistance in potential State and federal funding opportunities. Assistance and guidance would be provided to such agencies as follows:

a. The SWRCB would facilitate a newly established Water Recycling Funding Coordination Committee (Committee) to coordinate applicant's funding needs with the appropriate funding agencies. The Committee would guide the local agency through the identification of (1) Correct funding source(s), (2) Accountability measures and (3) Monitoring and assessment reporting requirements.

b. The Committee would establish quantifiable objectives to be used in the review of a proposed project. Objectives should include 1) the local, regional, and State benefits, and; 2) non-water supply benefits, resulting from the project. When reviewing proposed projects, the Committee would recommend modifications to maximize the benefit to the State's water supply.

c. The Committee would work cooperatively with funding agencies, streamlining project selection while ensuring an open process for setting selection criteria. Peer review

and public review of the project selection would also be provided. The Committee would work to ensure that projects have an appropriate level of scientific review, and ongoing monitoring and data analysis.

d. The Committee should maintain a listing of local, State and federally funded projects. The list should include detailed project cost and water supply yield information.

Approach and Implementation:

The SWRCB should facilitate the establishment of a Committee to implement the recommendation above. Members of the Committee would include representatives from the SWRCB, DWR, USBR, CALFED, the California WateReuse Association and other stakeholders. The committee would coordinate with the CALFED Bay-Delta Program, which is dedicated to accelerating the implementation of cost-effective actions to conserve and recycle water throughout the State as articulated in its August 2000 Record of Decision. Time frame: January 2004 - ongoing.

1.3. REGIONAL PLANNING CRITERION

Issue

Funding for water recycling projects could be more beneficial when regional planning is taken into consideration.

Recommendation 1.3.1.

State funding agencies should use information from completed regional studies when determining the prioritization of funding, for those projects encompassed under an existing regional plan. The process does not exclude projects where regional plans do not exist.

Approach and Implementation:

State funding agencies including SWRCB, DWR and DHS should use available information from completed studies as a basis to prioritize funding. Time frame: January 2004 - ongoing.

1.4. FUNDING INFORMATION OUTREACH

Issue

Potential applicants for funding encounter difficulties in finding information on funding sources and understanding their procedures.

Recommendation 1.4.1.

Public information to support education and outreach efforts should be provided by having funding agencies:

a. Present public funding availability at statewide conferences,

b. Establishing an Annual Water Recycling Funding Information Workshop to assist participants in preparing funding application packages for all funding sources (Federal and State) available, and

c. One common website.

Approach and Implementation:

The SWRCB should be in charge of setting up and maintaining a common water recycling website that would direct potential applicants and include information on funding sources and procedures. The website should go on line no later than June 2004.

SWRCB should organize annual water recycling information workshops to assist funding applicants in preparing their application packages. In addition, SWRCB should present funding information availability at statewide conferences. Time frame: September 2003 and ongoing thereafter.

Recycled water can be used for landscape irrigation of parks, as shown in the 8th Street Linear Park, Pittsburg, CA..

1.5. DEPARTMENT OF WATER RESOURCES TECHNICAL ASSISTANCE

Issue

For successful water recycling projects, there is a great need for technical assistance in terms of local and regional planning as well as the study of emerging issues and the exploration of new technologies.

Recommendation 1.5.1.

Funding sources should be expanded to include sustainable State funding (research funding to DWR only) for DWR's technical assistance and research, including flexibility to work on local and regional planning process, on-going studies of emerging issues, and new technology.

Approach and Implementation:

The Legislature should pass a bond allocating funds for a sustainable State funding for DWR technical assistance for water recycling. This includes feasibility studies, research and development, pilot testing, technology development and the study of emerging issues. Time frame: July-December 2003.

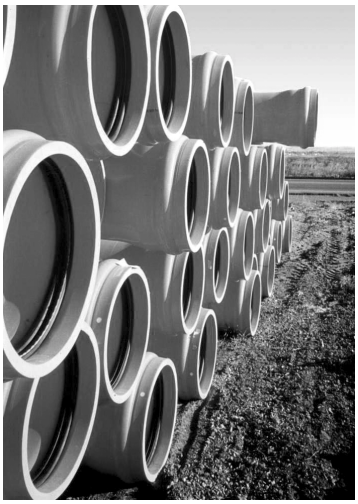
1.6. PROJECT PERFORMANCE ANALYSIS

Issue

There is a lack of a comprehensive cost/benefit analysis of past water recycling projects. Such information is crucial for future planning and projections.

Recommendation 1.6.1.

Funding agencies should be provided with the resources to perform comprehensive analyses of performance of existing water recycling projects. The analyses should include determina-



Purple colored pipes ready for installation to deliver recycled water. Purple has been designated for the piping used for recycled water in the California Health and Safety Code Section 116815.

tion of actual costs and benefits, and recycled water deliveries. The funding agencies should conduct these analyses jointly in an open and peer-reviewed process. These analyses should quantify recycled water yield in acre-feet per year and compare actual yield with planned yield. The analyses should list other benefits of recycling (such as water supply reliability), and where possible to quantify these benefits. They also should provide costs in equivalent units such as equivalent annual cost.

Approach and Implementation:

The Legislature should pass a bond to fund a comprehensive analysis to determine the performance (cost and benefits) of past water recycling activities and project future performance. Funds would be administered by the SWRCB. Time frame: July-December 2003.

2. Public Dialogue / Public Outreach

(There are no additional recommendations beyond those listed in Chapter 4.)

3. Plumbing Code/Cross-Connection Control

3.3. RECYCLED WATER SYMBOL CODE CHANGE

Issue

The Department of Housing and Community Development (HCD) initiated amendments to the California Plumbing Code, Sections 601.2.2 and 601.2.3, which covers recycled water systems within HCD controlled occupancies (hotels, apartment houses, employee housing, accessory buildings in mobile home parks, etc.). The Code amendments require that "A universal poison symbol of skull and crossbones shall be provided." The Statement of Reasons for these sections states "... to provide additional measures to protect the health and safety of the public...."

The plumbing code already requires labeling of recycled water piping. The marking requirements for recycled water are continuous along the piping.

The skull and crossbones requirement is perhaps intended to supply a non-English indication that the contents of the pipe are not suitable for ingestion. There is a symbol in the Water Recycling Criteria (CCR Title 22, Section 60310(g)) that can be used to indicate that water is not safe for consumption yet not alarm the public.

The quality of recycled water required for use within buildings of the type controlled by HCD (CCR Title 22, Sections 60306 and 60307) is also considered safe for uses such as park and playground irrigation, truck crop irrigation, and swimming - uses where some ingestion is expected. The anticipated ingestion exposure for swimming is 100 mL and the expected risk of illness when swimming in this quality recycled water is approximately 1 in 10,000. It is misleading to suggest that recycled water is a poison.

Recommendation 3.3.1.

Housing and Community Development Department should submit a code change to remove the requirement for the skull and crossbones symbol in Sections 601.2.2 and 601.2.3 of the California Plumbing Code.

Approach and Implementation:

DWR and DHS should request Housing and Community Development Department to initiate the change in time for the California Building Commission's 2004 annual code cycle.

3.4. STAKEHOLDER REVIEW OF PROPOSED CROSS-CONNECTION CONTROL REGULATIONS

Issue

DHS is drafting proposed changes to the cross-connection control regulations. There are concerns with the proposed requirements in the working draft of revisions. There would be a requirement for a double check valve on fire systems supplied by the potable water system where recycled water is used in a separate piping system within the same building. This requirement would make it difficult or impossible to retrofit a building with an existing fire system. The double check assembly would cause a pressure drop of approximately 10 psi. This might be enough to compromise the performance of a fire system that has not been designed for the head loss. Fire systems may not be engineered to exactly fit a building of site specification and it may be that a fire system can absorb a 10 psi drop without compromising the system. New systems can be designed to address the pressure drop.

Another issue to resolve is a conflict between the current Title 17 requirements and the California Plumbing Code. The California Fire Marshall is opposed to backflow devices on Class I and II fire systems and has amended Sections 603.4.18 and 603.4.19 of the 2001 California Plumbing Code to prohibit the installation of these devices.

Recommendation 3.4.1.

Stakeholders are encouraged to review the DHS draft changes of the Title 17 Cross-connection Control requirements and comment as appropriate.

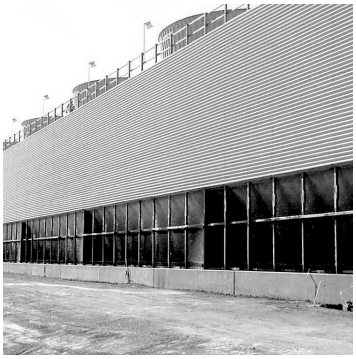
Approach and Implementation:

DHS should carry out this recommendation beginning July 2004.

3.5. CROSS-CONNECTION RISK ASSESSMENT

Issue

Despite a long history of water reuse in California, the question of safety of water reuse is still difficult to define and delineation of acceptable health risks has been hotly debated. Health risks associated with exposure to enteric viruses in recycled water were analyzed using a quantitative microbial risk assessment approach in 1990s. Monitoring data from



Los Medanos Energy Center utilizes recycled water for cooling in Pittsburg, CA.

four wastewater treatment facilities in California on enteric virus concentrations in unchlorinated secondary effluents were used as baseline data for the risk analysis. This assessment needs to be expanded and refined.

Recommendation 3.5.1.

The State should support a thorough assessment of the risk associated with cross-connections between disinfected tertiary recycled water and potable water. To assess potential health risks associated with the use of recycled water in various reuse applications, new comprehensive risk assessment should be carried to identify:

- the risk of a worst case cross-connection,
- the likelihood of a cross-connection in various use situations, and
- microbiological and chemical exposure risks.

The risk assessment would provide a scientific basis for regulations controlling potential cross-connections.

Approach and Implementation:

DHS in collaboration with other State and federal agencies and research institutions should carry out this recommendation beginning July 2004.

4. Regulations and Permitting

4.5. PERMITTING PROCEDURES

Issue

As a minimum, each recycled water distribution system must have at least one permit from a RWQCB. The permit must incorporate statewide standards adopted by DHS and may include other recommendations by DHS protective of public health. All new projects or additions are required to submit engineering reports for DHS review. Some agencies have found the procedures of DHS and the RWQCBs to be lengthy and cumbersome. There may be opportunities to streamline these procedures. Aspects of this issue that have been suggested for consideration are 1) investigation of the timing of permits vis-à-vis the CEQA process, 2) the permitting of seasonal storage, and 3) the development of a one-stop approach to permitting. There is an overlap in the permitting issues and the uniform interpretation of State standards issue addressed in the previous chapter. After analysis of the issue, the Task Force makes the following recommendations in addition to those captured in under the uniform interpretation of State standards issue.

Recommendation 4.5.1.

DHS should continue to maintain and update its “California Health Laws Related to Recycled Water - The Purple Book,” which is an excellent resource for the permit requirements related to recycled water projects.

Approach and Implementation:

The Purple Book, named after the standard color used for recycled water piping, is an effective resource. Often such resources are left to languish by their creators. The Task Force recognizes this useful document and urges it maintenance and encourages its greater accessibility by improving the DHS Web site to be able to find it. Time frame: July 2003-on-going thereafter.

Recommendation 4.5.2.

Association of California Water Agencies and California Association of Sanitation Agencies should clarify for their members: under what circumstances water and wastewater agencies must seek permits from local land use and building authorities for recycled water projects.

Approach and Implementation:

In addition to State permits, there may be local permits required for the construction of water recycling facilities. There has been confusion on the part of project sponsors and local permitting authorities regarding when it is appropriate to require or obtain such permits. It would be a service for the water recycling agencies if the associations representing water and wastewater agencies to clarify the circumstances such permits are required. Time frame: July-December 2003.

Recommendation 4.5.3.

DHS should clarify the requirements for engineering reports to cover multiple sites of similar use.

Approach and Implementation:

An increasing number of recycled water projects involve distribution systems with dozens or hundreds of individual sites and continual additions of new customers as the systems expand. While DHS review is important to protect public health, the production of formal engineering reports for each site and each new addition can be cumbersome when the issues related to the sites have already been addressed for previous sites of similar use. DHS should clarify the requirements for engineering reports and the formats for them that would reduce the work in their preparation when multiple sites of similar use are involved. Time frame: January-March 2004.

Recommendation 4.5.4.

State and local tax incentives should be provided to recycled water users to help offset the permitting and reporting costs associated with the use of recycled water.

Approach and Implementation:

Recycled water users may incur additional costs for using recycled water instead of potable water. For example, separate plumbing systems must be installed to deliver two sources of water. The users may also be required to keep logs of all repair and mainte-

nance activities on the recycled water piping systems to verify that cross-connections have not occurred. Many agencies provide a financial incentive to use recycled water by selling the recycled water at a lower price than potable water, sometimes using potable water revenue to subsidize the recycled water system costs. Another mechanism could be providing tax incentives to users. The Legislature should consider tax incentives to offset costs incurred by users of recycled water. Local agencies should consider tax or other financial incentives to offset costs incurred by users of recycled water. Time frame: July 2003 and on-going thereafter.

4.6. SOURCE CONTROL

Issue

Source water/wastewater quality is a significant potential impediment to the expansion of recycled water usage in California. While it can be resolved through technology and management, the costs both monetarily and to public perception of recycled water can be expensive. Local agencies promoting water recycling must be aware of the potential presence of chemicals in recycled water and the potential public perception of what might be in the water. Thus, they must ensure that there is a strong source control program in place to maintain public confidence in the safety of water recycling projects.

Recommendation 4.6.1.

Local agencies should maintain strong source control programs to protect the quality of recycled water for potential uses and protect public health.

Approach and Implementation:

Local agencies maintain source control programs that include identification of all dischargers into sewer systems, analyses of discharge contributions, establishment of discharge limits on chemicals of concern, strong enforcement of limits, and public education programs regarding household chemicals that are unregulated. Time frame: July 2003 and on-going thereafter.

5. Economics of Water Recycling

5.2. ECONOMIC ANALYSIS

Issue

A project may be economically feasible, but not financially feasible and vice versa. Economic analyses provide more transparency on true benefits and costs and increase the probability of identifying project beneficiaries that can make the project more financially feasible and economically justified. Often project feasibility studies overlook economic analyses and focus on financial analyses.

Recommendation 5.2.1.

Local agencies are encouraged to perform economic analyses (quantifying total benefits and costs) of water recycling projects in addition to financial analyses (to determine cash flow) even if they are not seeking State or federal funding.

Approach and Implementation:

Agencies need to include such analysis in their feasibility studies once a guidebook on conducting economic feasibility analysis is developed pursuant to Recommendation 5.1.1 (e) Time frame: January 2004 - ongoing.

Recommendation 5.2.2.

A financial and an economic analysis should be included as two of the funding criteria in State and federal funding programs. Projects proposed for funding should be financially feasible (sufficient cash flow to pay for and maintain the project) and economically feasible (total statewide project benefits exceed total statewide project costs). The funding agencies should provide guidance and assistance for all funding applicants to conduct the analyses; and review the analyses in applications to ensure they are done appropriately and consistently. These analyses need not duplicate appropriate analyses already performed by local agencies.

Approach and Implementation:

A revised funding procedure as required by Recommendation 1.2.1 needs to include a requirement that agencies applying for public funds submit a financial and an economic analysis to be eligible to receive funding. Time frame: January 2004 - ongoing.

6. Science and Health/Indirect Potable Reuse

6.3. STATEWIDE SCIENCE-BASED PANEL ON INDIRECT POTABLE REUSE

Issue

After extensive discussions and deliberation on this issue, recommendation was made not to reconvene the California Indirect Potable Reuse Committee. The State of California Department of Health Services should be able to make informed and scientific determinations on issues related to indirect potable reuse based on the following publications.

- "Report of the Scientific Advisory Panel on Groundwater Recharge with Reclaimed Wastewater", Prepared for State of California, State Water Resources control Board, Department of Water Resources, and Department of Health Services, November 1987.
- "Issues in Potable Reuse - The viability of augmenting drinking water supplies with reclaimed water", National Research Council, 1998.
- " A Proposed Framework for Regulating the Indirect Potable Reuse", Prepared by The California Potable Reuse Committee, January 1996.
- DHS Draft Groundwater Recharge Regulations (August 2002)

Recommendation 6.3.1.

It is recommended not to reconvene the statewide science-based panel to address indirect potable reuse. However, it is recommended to convene a new statewide panel to address issues related to indirect potable reuse as presented in recommendation 2.2.6.

Approach and Implementation:

The proposed panel on indirect potable reuse is described in Recommendation 2.2.6.